

REMARKS

Applicants have carefully reviewed the office action dated November 14, 2003. With this amendment, claims 1, 13, 14, 16, 29, 30, 32, and 33 have been amended. Claims 1-39 remain pending. Applicants respectfully thank the Examiner for the indication that claims 14-15 and 30-31 would be allowable if re-written in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-9, 16-25, 32-35, and 37-39 are rejected under 35 U.S.C. §102(b) as being anticipated by Lafontaine in U.S. Patent No. 5,662,621. Applicants respectfully traverse this rejection.

Independent claim 1, as amended, recites a variable stiffness “guide wire” including a “core shaft”, and a “polymeric member” disposed on and “attached to” the core shaft of the guidewire. This clarifies that claim 1 is directed to a “guide wire” including the “core shaft” and the “polymeric member” attached thereto, and that both the “core shaft” and the “polymeric member” are attached components of the claimed “guide wire”. The polymeric member of the guide wire has a first flexibility at a first temperature and a second flexibility at a second temperature, wherein the first temperature is less than the second temperature and the first flexibility is less than the second flexibility. The guide wire further includes a heat source disposed on the distal portion of the core shaft, the heat source being in thermal communication with the polymeric member of the guide wire. Activation of the heat source causes the polymeric member of the guide wire to rise from the first temperature to the second temperature to thereby change the flexibility of the distal portion of the guide wire.

In contrast, Lafontaine discloses a guide or diagnostic catheter including a shaft defining a lumen. At least a portion of the catheter shaft is formed of a material responsive to stimulus for selectively changing at least a portion of the catheter shaft between a generally ductile state and a generally stiff state. In some embodiments, a core member that can be insertable into the lumen of the catheter shaft can be used as a means for providing the necessary stimulus to selectively change at least a portion of the catheter shaft between the two states.

Lafontaine does not teach or suggest a “guide wire” including a “core shaft” and a “polymeric member” disposed on and “attached to” the core shaft. In other words, Lafontaine

does not teach or suggest the claimed core shaft and polymeric member being attached to each other as attached components of a variable stiffness “guide wire”. Additionally, Lafontaine does not teach or suggest the claimed heat source in thermal communication with the claimed “polymeric member” of the guide wire, whereby activation of the heat source causes the polymeric member of the guide wire to rise from the first temperature to the second temperature to thereby “change the flexibility of the distal portion of the guide wire”. Instead, Lafontaine’s teaches a catheter with a lumen and in some embodiments, a separate core member that can be insertable into the lumen of the catheter as a means for providing the necessary stimulus to selectively change at least a portion of the catheter shaft between the two states. These differences distinguish the claimed invention from Lafontaine. Thus, Applicants respectfully submit that claim 1 is now in condition for allowance. Additionally, dependent claims 2-13 are also allowable because they depend from independent claim 1, and because they further add significant elements to distinguish them further from the prior art.

Independent claim 16 is similarly directed to a variable stiffness “guide wire”, and as amended, also recites that the “polymeric member” of the guide wire is “attached to” the core shaft. Again, this clarifies that claim 16 is directed to a “guide wire” including the “core shaft” and the “polymeric member” attached thereto, and that both the “core shaft” and the “polymeric member” are attached components of the claimed “guide wire”. The guide wire of claim 16 also includes a heat source in thermal communication with the polymeric member of the guide wire, whereby activation of the heat source causes the polymeric member to change the flexibility of the distal portion of shaft.

As discussed above, Lafontaine does not teach or suggest a variable stiffness “guide wire” including a “core shaft”, and a “polymeric member” disposed on and “attached to” the core shaft of the guidewire. In essence, Lafontaine does not teach or suggest the claimed core shaft and polymeric member being attached to each other as attached components of a variable stiffness “guide wire”. Additionally, Lafontaine does not teach or suggest heat source in thermal communication with the “polymeric member of the guide wire”, whereby activation of the heat source causes the “polymeric member of the guidewire” to change the flexibility of the distal portion of shaft. Accordingly, Applicants respectfully submit that independent claim 16 is distinguishable from Lafontaine and in condition for allowance.

Dependent claims 17-29 are also allowable because they depend from claim 16, and because they add significant elements to distinguish them further from the prior art.

Independent claim 32, as amended, recites a variable stiffness guidewire system including a "guidewire" having a "core shaft", and a "polymeric member attached to the core shaft". Again, this clarifies that in claim 32, the "guide wire" includes the "core shaft" and the "polymeric member" attached thereto, and that both the "core shaft" and the "polymeric member" are attached components of the "guide wire". The guidewire further includes a heat source in thermal communication with the polymeric member of the guide wire. The guidewire system also includes a power supply connected to the heat source, whereby activation of the heat source by the power supply causes the polymeric member of the guide wire to change the flexibility of the distal portion of the guide wire.

Again, Lafontaine does not teach or suggest the claimed guidewire structure including a "core shaft" and a "polymeric member attached to the core shaft". Additionally, Lafontaine does not teach or suggest the claimed heat source in thermal communication with the polymeric member of the guide wire, or the claimed power supply connected to the heat source, whereby activation of the heat source by the power supply causes the polymeric member of the guide wire to change the flexibility of the distal portion of the guide wire. Accordingly, Applicants respectfully submit that claim 32 is distinguishable from Lafontaine and in condition for allowance.

Similarly, independent method claim 33, as amended, recites that the provided guidewire includes a "core shaft", and that the polymeric member "is attached to the core shaft". Again, this clarifies that in claim 33, the provided "guide wire" includes the "core shaft" and the "polymeric member" attached thereto, and that both the "core shaft" and the "polymeric member" are attached components of the "guide wire". Claim 33 also recites that the guide wire includes a heat source in thermal communication with the polymeric member of the guide wire, and further recites changing the flexibility of the distal portion of the guide wire by activating or deactivating the heat source. These features are not taught or suggested by Lafontaine. Accordingly, Applicants respectfully submit that amended claim 33 is now distinguishable from Lafontaine and in condition for allowance. Dependent claims 34-39 are

also allowable because they depend from independent claim 33, and also because they add significant elements to distinguish them further from the prior art.

Claims 10-13 and 26-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lafontaine in view of Hemmer et al. in U.S. Patent No. 5,531,685. Applicants respectfully traverse this rejection, to the extent that it is maintained.

Claims 10-13 are dependent from claim 1, and claims 26-29 are dependent from claim 16. As discussed above regarding independent claims 1 and 16, Lafontaine does not teach or suggest a guidewire including a “core shaft” and a “polymeric member” disposed on and “attached to” the core shaft. Additionally, Lafontaine does not teach or suggest the claimed heat source in thermal communication with the claimed “polymeric member” of the guide wire that can be used to change flexibility.

Hemmer et al. does not cure the deficiency of Lafontaine. Like Lafontaine, Hemmer et al. does not teach or suggest a “guidewire” including a “core shaft” and a “polymeric member” disposed on and “attached to” the core shaft. In other words, Hemmer does not teach or suggest the claimed core shaft and polymeric member being attached to each other as attached components of a variable stiffness “guide wire”. Additionally, with regard to claim 1, Hemmer does not teach or suggest the claimed heat source in thermal communication with the claimed “polymeric member” of the “guide wire”, whereby activation of the heat source causes the polymeric member of the guide wire to rise from the first temperature to the second temperature to thereby “change the flexibility of the distal portion of the guide wire”. Furthermore, with regard to claim 16, Lafontaine does not teach or suggest heat source in thermal communication with the “polymeric member of the guide wire”, whereby activation of the heat source causes the “polymeric member of the guidewire” to change the flexibility of the distal portion of shaft.

Thus, neither Lafontaine nor Hemmer et al., alone or in combination, disclose the claimed variable stiffness guide wire. Therefore, Applicants respectfully submit that independent claims 1 and 16 are not obvious under Lafontaine in view of Hemmer et al., and that dependent claims 10-13 and 26-29 are therefore also not obvious.

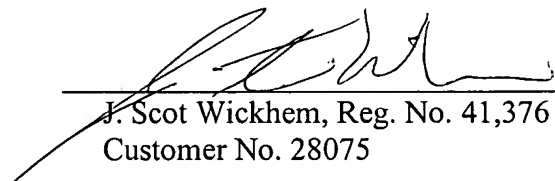
Dependent claims 14, 15, 30, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of

the limitations of the base claim and any intervening claims. Claims 14-15 ultimately depend from claim 1, and claims 30-31 ultimately depend from claim 16. As stated above, applicants respectfully submit that independent claims 1 and 16, and all intervening claims, are now in condition for allowance. As such, applicants respectfully request removal of this objection.

It is respectfully submitted that all pending claims are now in condition for allowance. Reconsideration and withdrawal of the outstanding rejections and objections are respectfully requested. Issuance of a Notice of Allowance in due course is also respectfully requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,
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By their Attorney,

Date: February 3, 2004


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